ALBERTA EDUCATION - CURRICULUM DESIGN BRANCH

ELEMENTARY SCIENCE NEEDS ASSESSMENT SURVEY

SUMMARY OF KEY FINDINGS

Introduction

In February 1989 a survey regarding elementary science was sent to all jurisdictions and elementary schools. Five regional meetings, attended by jurisdiction nominees, were also held. Of 515 returns, 450 were mail-ins while 65 were from regional meetings. There were no significant differences between the mail-in and regional meeting responses.

Content of the Program

There was strong agreement with the philosophy and rationale of the current science program of studies, with 97.7% of respondents supporting science experiences based on inquiry and 97.9% agreeing with the value of hands-on learning activities. The current topics are generally seen as appropriate; some suggestions for additional or alternative topics were given.

Respondents agreed that there should be a core sequence of elementary science topics (79.8%), but they disagreed about how much opportunity there should be for choosing topics at the local level (53.2% felt there should be more local decision making; 37.5% disagreed). Respondents do not wish the objectives to be more general (68.4% against) but could not agree whether greater specificity is desirable (only 51% support). A suggestion that arose was to provide flexibility and local choice within the program of studies, but to offer more guidance to generalist teachers (e.g. sample year plans and lessons) within the non-mandated support documents.

There was support (80.8%) for incorporating the Science/Technology/Society (STS) approach into the elementary science program. Most respondents (72.2%) felt that STS ideas (applications and implications of science) should be dealt with in a variety of topics rather than in separate STS units.

The development of positive attitudes (such as open-mindedness, concern and care for the environment, respect for living things, and curiosity) were seen as very important and 71.7% felt they should be included in the program of studies. The importance of the teacher as a role model was emphasized in the comments.

There was a sense of uncertainty as to the value of computers in elementary science with 20% of respondents choosing to give no opinion, although 68.3% saw the need for learning outcomes related to computers. Respondents indicated that computers were valuable if they helped meet the objectives of the program, but should not be "ends" in themselves.

Respondents suggested a need for assistance in using the inquiry approach to teach science and indicated that descriptions of process skills in the current curriculum documents do not facilitate evaluation. They felt that descriptions of increasing expertise in problem solving skills and strategies should be provided (79.0%) and that a cross-curricular model of problem solving should be developed (76.1%).

Organization of the Program

More people favored organizing topics by grade level (63.1%) than by division (38.4%).

Cross referencing science concepts and skills to learning outcomes in other subject areas received approval (80.0%). Interest was expressed in the interrelationship between language learning and science.

Learning Resources and Teacher Support Materials

Teacher resource books (96.5%) and kits and other "hands-on" resources (97.7%) were seen as more valuable than student textbooks (65.8%) and computer software (58.1%). There was considerable interest in teacher support documents. Respondents indicated that sample activities (91.7%) rather than detailed lesson plans (66.0%) would be most useful. 80.4% requested guidelines with respect to child development and science learning. A number of people commented that they would like to see the following areas addressed in teacher support materials: evaluation of the process skills and problem solving; science fairs; split grades; development and maintenance of kits; meeting individual needs; development of topics using the inquiry approach.

Summary

The response to this survey indicates that support for teachers is a major concern. Changes in both format and content of the program of studies, enhanced teacher support documents and improved implementation strategies were suggested to address this need.

Distributed April 1989 to:

Regional Offices
Superintendents
Elementary School Principals

X.5

Summary of 1989 Curriculum Seminar

Barnett House, 1989 03 03/04

The Curriculum Seminar was attended by 122 participants representing the following groups:

Specialist Councils	19
Curriculum, Student Evaluation, Regional Mental Health Councils, and Political Involvement Committee representatives	23
ATA Locals	35
Department of Education Personnel	12
University Representatives	6
Speakers	3
Provincial Executive Council	14
ATA Staff	10
	122

Fifty two participants completed and returned evaluation forms. The summary of responses appears on pages two to eight.

Friday evening Bruce M Lee welcomed delegates and stressed the Association's position that Alberta students receive high quality education supported by the necessary curriculum resources. Dr Larry Beauchamp (University of Alberta) addressed the topic "Perspectives on Curriculum Building". Conceptual frameworks of curriculum provided the focus for small groups sessions which followed. The evening program concluded with a social gathering.

Jack Haggarty brought greetings to seminar participants on Saturday. Keynote speaker, Dr Ted Aoki (University of Victoria) delivered a poignant message, "Layered Understandings of Curriculum and Pedagogy: Challenges to Curriculum Developers". A panel composed of Donna Kozak (elementary teacher), Wally Anderson (secondary teacher), Cliff Youngs (ATA) and Dr Sue Therrien (Department of Education) and moderated by Bruce M Lee presented differing views on the "Teachers' Role as Curriculum Builder". Nine small groups assembled to draft and present their proposals for action in a plenary session.

1. On a Likert scale of 1-5, where 5 indicates excellent, participants were asked to express their overall feelings about the seminar.

N = 51

very poor	poor	good	very good	excellent
x	x	x	x	x
1	2	3	4	5
		(9)	(33)	(9)
		(17%)	(65%)	(17%)

2. Reasons cited for satisfaction.

--Thoughts seemed generalized for all groups.
--Shared knowledge.
--Provincial perspective/networking.
--Dr Aoki.
--Excellent presentation speakers.
--Group discussion allowed us to relate information to us specifically.
--Develop networks with colleagues in a variety of provincial locations.
--I'm glad we finally got around to the teacher's role in curriculum development; the panel was particularly helpful.
--It's helpful to get the various stakeholder groups together.
--Coming up with specific recommendations was a good idea.
--I enjoyed thoroughly the opportunity to listen, share, relate, realizing that personal frustrations (!) are commonly held, plus becoming more cognizant of other's interests, points of view.
--A chance to have contact with Alberta Education representatives and other professionals.
--People thinking together about common problems.
--Saturday Aoki hit the soul. Corresponding work fruitful.
--Representation from a number of stakeholders. Good keynote speaker - Dr Aoki.
--The questions to Alberta Education were great.
--The small group sessions.
--The location was good.
--Brought three levels - teachers and ATA, Department of Education and Universities together.
--Dr Aoki's presentation.
--Small group activity Friday night.
--Ted Aoki - curriculum humanized and needful to students and teachers.
--Good speaker.
--Good activities.
--Good variety of input by stakeholders.

--Dr Ted Aoki - very uplifting.
--Individual group discussions sharing frustrations.
--Dr Aoki's presentation/the group discussions.
--Please do send out the proceedings and copies of the findings and Saturday talks if at all possible.
--Wide range of backgrounds - interaction.
--Good group facilitation.
--Ted Aoki/social, informal interaction.
--It allowed for interaction.
--We had a chance to voice concerns.
--Good speakers.
--Topics discussed of professional interest.
--Exchanges of ideas with other colleagues always desirable.
--I enjoyed the two small discussion sessions - interaction.
--I enjoyed listening to Donna Kozak.
--It was nice to be involved with the ATA and PD for a change instead of ATA and TW.
--The seminar provided a better understanding of the process of curriculum development.
--The seminar generated a concern for the issues dealing with curriculum.
--An appreciation of the people and agencies involved in curriculum development.
--Clarification of issues.
--Suggested directions for curriculum development.
--Group session allowed interchange, clarification, directives evolved.
--Clarity of the issues - variety of views/perspectives.
--Appreciate Alberta Education's attendance and ears.
--Wide spectrum of participants.
--Dr Aoki.
--Ted Aoki's talk.
--Saturday group activity and reporting.
--The group sessions were good - discussions were beneficial.
--Panel session was the highlight - stimulated a lot of good questions.
--Good mixture of participants (teachers, Alberta Education, University, ATA, administrators, etc.)
--Constructive suggestions for stakeholders were developed.
--Contacts with other curriculum interest groups.
--Ted Aoki's talk.
--Frank answers to questions.
--Group was very congenial.
--Opportunity for dialogue and sharing of ideas and for hearing Ted Aoki.

--Good sharing of ideas.
--Speakers good especially Dr Aoki.
--Opened my eyes to something I haven't given much thought to. I've taken indepth curriculum thought for granted. I didn't ever think of myself as having curriculum input.
--Excellent selection of speakers.
--Reminded of the curriculum building process versus the theoretical curriculum models.
--The two group discussions were okay. The second session could have been all morning.
--To find out that teachers from all over the province are frustrated so that I didn't feel I was the only "one".
--Received a better understanding of curriculum.
--Particularly enjoyed Dr Aoki's presentation (appreciated).
--ATA's attempt to take a more active role <u>with teachers</u> in curriculum planning.
--Interesting approach - allowed for involvement.
--Friday evening session very good.
--Thought provoking (Robin Stuart's group).
--Dr Aoki.
--Group discussions.
--Sharing of ideas.
--Motivating thoughts.
--Increased contacts.
--Dr Aoki was excellent.
--Small group work was excellent.
--Meals satisfactory as well; Friday night social was enjoyable.
--Became aware of general dissatisfaction of teachers' roles in curriculum development.
--Excellent exchange of ideas.
--Thoroughly enjoyed Dr Aoki.
--The chance to listen (and participate) to views of other teachers/Alberta Education on curriculum development.
--The increased awareness that I as an ordinary classroom teacher can do something about curriculum matters.
--The chance to be energized/inspired, especially by the Aoki session.
--Excellent please do it again.
--I have a better understanding of curriculum.
--The sharing of ideas with teachers, university, and Department of Education.
--Good dialogue between stakeholders.
--ATA initiative in curriculum.
--Excellent presentations.
--Good mix of theory and practice.
--Opportunities for discussion and questions.
--Involvement of representatives from various areas.

--Dr Aoki was superb - speaker system needs upgrading.
--Opportunity to share directions for the Association.
--Review of the many problems plaguing/stressing teachers and how we can work for tangible and plausible solutions.
--Educating people in the orientations of curriculum.
--Dr Aoki!!!
--Small group sessions gave people an opportunity to comfortably air their views.

3. Constructive Criticism:

--Group could have been better facilitated.
--Lack of pre-seminar information and what I had was not specific enough eg location of registration desk.
--Helpful to have some information left at Edmonton Inn registration desk re: times, places, directions etc.
--Lack of enough time for discussion limited by definite task.
--The talk on conflicting conceptions of curriculum and Dr Aoki's talk (while interesting) seemed tangential to purpose of content.
--Panel discussion if offered on Friday night might have gotten us down to practical concerns more quickly.
--I am extremely disappointed with your grouping arrangements! Here was an opportunity for classroom teachers, ATA, university, other interest groups, Alberta Education to mix, share ideas, points of view, which were missed.
--Next seminar, we, as ATA, must be more prepared as Alberta Education is with statistics. For example, so that we can ask very specific (non-rhetorical) questions, and not be evaded.
--Too little time to discuss.
--Inadequate preparation.
--Friday evening presentation.
--Poor panel discussion.
--Not enough time for small group discussion.
--Small group leaders should have been more knowledgeable about curriculum design than mine was.
--The keynote reader was painful.
--The lecture on Friday night was rather technical ie panel insufficient attention to needs of audience.
--Friday night speaker "intersubjective dialogue" is beyond my level of comprehension.
--Larry Beauchamp - too "aery faery".
--Opening address was read rather than communicated.
--Evening keynote read presentation and was way over my knowledge of curriculum - I'm just learning and he went way too fast.
--Some of what Dr Aoki said went over my head.

--Would like to have had time to question speakers, re-clarification.
--Friday evening presentation was questionable.
--Friday evening speaker.
--Saturday panel.
--The presentation by Dr. Beauchamp was too highly theoretical and the high level language was difficult to understand. Group sessions afterwards did help to clarify things.
--Keynote speaker - could have accomplished as much by printing and distributing his address.
--Friday night should be more lively.
--Groups should be more heterogenous re: subject area.
--More constructive with small groups, less with large.
--Opening session a bit heavy and mind boggling.
--I would have liked more information before attending on what the agenda was, since I've not given curriculum much thought besides teaching with it.
--Overhead writing must be bigger so people at the back can read them. Aoki's were just too small.
--Friday evening too theoretical - could have provided a handout.
--First session was a little too philosophical for a Friday evening.
--I'm not sure Alberta Education is ready to listen. I doubt if we will see any change.
--Friday night lecture!
--Time limits.
--Didn't like the rapid speed Beauchamp "read" the prepared paper. Would like a copy please!
--The awareness that curriculum changes (specifically articulation for ECS-6) has not trickled down to the teacher level (my level). ATA or Alberta Education should mail these documents (and others) directly to teachers. So often they arrive somewhere else. I, as a teacher, should be able to read these documents instead of just administrators.

4. Specific suggestions for future Curriculum Seminars:

--Continue small group sessions.
--Keep informed and communicate concerns.
--More chance to dialogue with Alberta Education re: specific monographs.
--Do have more conferences with all stakeholder groups.
--Make sure focus of conference is clear and that all sessions are consistent with it.
--More heterogenous mixing in groups.
--Very specific data on precisely what numbers of teachers are involved and what level teachers are involved in.
--Putting more emphasis in the association re: curriculum as a professional organization.

--Share case studies of school-based curriculum development/staff development/school implementation.
--Share teacher stories of realities, pedagogy, dreams, needs, agendas.
--Panel good idea - screen presenters better - some were not well prepared.
--Panel - allow time for members to respond/rebut.
--More time for small group discussion.
--Curriculum groups should meet and plot a strategy to deal with Alberta Education.
--One speaker on Friday night followed by two activities and panel discussion on Saturday.
--Get a speaker for Friday night who is a little more down to earth - too heavy.
--More dialogue with Department of Education.
--Curriculum Finance - who should pay, how should the Association be involved, how should teachers be involved?
--Continue this format.
--More small group sessions to set up what the ATA should be concentrating on as far as curriculum is concerned. The ATA needs to develop a process for dealing with curriculum.
--Maintain the province-wide nature of the seminar.
--Circulate some of the written materials beforehand for background reading.
--Lengthier "bear pit" session with Alberta Education.
--Beyond Alberta perspective - national/global.
--Specific strategies for successful implementation at the district/school level.
--More group work activities - open question and answer with large groups.
--Evaluative techniques for curriculum.
--Role of student test results - evaluating curriculum development.
--Regional workshop - techniques - criteria for curriculum development at school division level etc.
--Make them regular (quarterly).
--Continue small group work.
--Keep them coming.
--Worthwhile to have two times per year province-wide.
--Don't invite keynote speakers who speak over the heads of the audience by being too theoretical.
--Greater promotion of the seminar in order to involve more teachers.
--More small group work.
--Some more with Dr. Aoki.
--Have sessions like this at school level to promote more positiveness toward curriculum and input.
--I would like copies of the speeches.
--I would like summaries of recommendations from small groups.

--Organize specific subject area inservice. Travel to different schools and jurisdictions and present - use the specialist councils.
--Have more surveys (questionnaires) of different issues of curriculum in order to find out what teachers really want/need and then act on feedback.
--Have specific subject area meetings in various zones for department heads. For example, Edmonton Public department heads meet on a regular schedule. It would be great to have department heads for Sturgeon, St Albert, Spruce Grove, Stony Plain, Westlock, etc. get together on a regular schedule. But who would organize these?
--More emphasis on what we can do rather than the focus on what others aren't doing.
--Inservice - its place in implementation.
--Keep up the commitment to cooperation of stakeholder groups.
--Possibly a single topic for small group sessions could be provided. Our group did tend to wander into individual concerns; perhaps a topic could lead us into "deeper" curriculum concerns rather than school problems.
--Some separation in divisions ie elementary, junior high and senior high - our concerns are somewhat different.
--Role of ATA and achievement.
--Role of Department of Education.
--Role of Universities.
--Do define teacher role.
--Act on our suggestions.
--This seminar should take place more often to inform teachers of the curriculum changes.
--Specifically though, separate specialist councils should offer inservice to teachers about the changes or is this Alberta Education's responsibility?
--Super job you did!
--More time with Dr Aoki.
--More time spent on link between evaluation and curriculum.
--Study of integrated curriculum planning.
--Just repeat until we succeed - keep teachers informed and lobbying Alberta Education for change.
--Hearing more "stories" on experiences of curriculum development and implementation.
--Initiating situations for more dialogue between Alberta Education and teachers.